Martinez/Needleman-Wunsch DNA Alignment

	, v410 :GGGGC :GGGGC	v490 AACCG AACCG	v570 CTGTGCG CTGTGCG CTGTGCG	v650 CGTCC CGTCC CGTCC	v730
	v400 GCGCTTCGCC GCG TTCGCC GCGGTTCGCC	v480 AGCCGGGCCC AGCCGGGCCC	v560 CGGCCGCG-CT CGGCCG G CT CGGCCG-GCCT	v640 CTGCGCAACA CTGCGCAACA CTGCGCAACA	v720
Consensus Length 1658 1658	v390 JGTCCAGCCT JGTCCAGCCT	v470 NTGGTCCCAG NTGGTCCCAG NTGGTCCCAG	v550 GGCTGGGTGGC GGCTGGGTGGC GGCTGGGTGGCC	v630 TCAGCCGCGC TCAGCCCGCGC	v710
y: 0.33 Gap Gap Number Length 16 17 16 17	v380 3GACGGTCCCC 3 ACGGTCCCC	v460 STCGGTCCTCATO STCGGTCCTCATO STCGGTCCTCATO	v540 v550 v560 CGGGGGCAGCGGCTGGGGGGGGCGGGGGGGGGGGGGGGG	v620 TCATCTGCACT TCATCTGCACT TCATCTGCACT	0.00 V 7.00
gth Penalty: C Similarity T6 Index Nu 97.2	v370 STGTTCTCACC STGTTCTCACC	v450 sccerccacco sccerccacco	v530 STCGCCCCGG STCG STCG	v610 CTGATCGCGCT CTGATCGCGCT CTGATCGCGCT	0694
ty: 1.10; Gap Length Penalt Seq2(1>1647) Similarity Seq ID 12> h5-HT6 Index (1>1647) 97.2	genban F v360 regterencecetre regterenceceetre	v440 CACTCCCTTG CACTCCCTTG	v520 GGGCCGCC-G' GG C GCC G' GG-C-GCCCG'	v600 · CAACTCGCTGC CAACTCGCTGC CAACTCGCTGC	089A
Seq2(1>1647) 1101, Gap Le Seq2(1>1647) 1101, Gap Le Seq2(1>1647) 1101, Gap Le Seq2(1>1647) 1101, Gap Le Seq ID 12 Photographic Seq ID	ACLES TO ACLES AND ASSOCIATED TO A SECURITION ASSOCIATED TO ACCUMULATE A SECURITION ASSOCIATED TO A SECURITION ASSOCIATED ASSOCIATED TO A SECURITION ASSOCIATED TO A SECURITION ASSOCIATED ASSOCIATED TO A SECURITION ASSOCIATED ASSOC	v430 GCCACCCTA1 GCCACCCTA1 GCCACCCTA1	v510 CTGGGGGGCA CTGGGGGGCA	v590 .ceeceeceecc .ceeceeceecc .ceeceeceecc	\d\d\d\d\d\d\d\d\d\d\d\d\d\d\d\d\d\d\d
Minimum Match: 9; Gap Penalty: 1.10; Gap Length Penalty: 0.33 Seq1(1>1984) (1>1647) Seq2(1>1647) Seq1(1>1984) (1>1647) Seq1(1>1984) (1>1647) Seq1(1>1647)	معرب کی اسمیاری میران کی استان کرد کی استان کی استان کی استان کی استان کی استان کی کرد	v420 v430 v440 v450 v460 v470 v480 v499 CCTCATCTGCTTTCCCGCCACCCTATCACTCCTTGCCGTCCTCGGTCCTCATGGTCCCAGAGCCGGGCCCAACCG CCTCATCTGCTTTCCCGCCACCCTATCACTCCCTTGCCGTCCTCGGTCCTCATGGTCCCAGAGCCGGGCCCAACCG CCTCATCTGCTTTCCCGCCACCCTATCACTCCCTTGCCGTCCACCGGTCCTCATGGTCCCAGAGCCGGGCCCAACCG CCTCATCTGCTTTCCCGCCACCCTATCACTCCCTTGCCGTCCTCGGTCCTCATGGTCCCAGAGCCGGGCCCAACCG	v500 v510 v520 v530 v540 v550 v560 ccaaTagcacccccggcgcccccggcgccgccgccgccccgcccccgcccc	v580 v590 v600 v610 v620 v630 v640 v610 v620 v630 v640 v620 v630 v640 v620 v630 v640 v630 v640 v630 v640 v640 v640 v640 v640 v640 v640 v64	V680 v670 v680 v670 v680 v670
% (3,5,5) (3,5,5)	AC ACOSS	υ ὑ ὑ ϖ υ υ υ ‹	000 000 000 000	TGC TGC	AAC

AACTICITCCTGGTGTCGCTCTTCACGTCTGACCTGATGGTGGGGCTGGTGGTGATGCCGCCGGCCATGCTGAACGCGCT AACTICTICCIGGIGICGCICTICACGIÇIGACCIGAIGGI GGGCIGGIGGIGAIGCCGCCGGCCAIGCIGAACGCGCI

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,320 ~330 v,740 v750 GTACGGCGCTGGGTGCTGGCGCGGGTACGGGCGCTGGGTGCTGGCGCGGGGGGGG	^330 v750 srccreccecesrecrecrecececececececececece	*340 v760 segccrcrecc segccrcrecc	^350 v770 rgcrcrggac rgcrcrggac rgcrcrggac	^360 V780 CGCCTTCGAC CGCCTTCGAC	v340 v350 v360 v370 v380 v390 v390 cGGCCTCTGCCTCTGGACGCCTTCGACGTGATGTGCTGCAGCGCCTCCATCCCGCCTCTGGACGTCTTCGACGTGATGTGCTGCAGCGCCTCCATCCCGCCTTCGACGTGATGTGCTGCAGCGCCTCCATCCCGCCTCTGGACGCCTTCGACGTGATGTGCTGCAGCGCCTCCATCCcGCCTCTGGACGCCTCCATCCcAGCCCTCCATCCCAGCCCTCCAGCCCTCCATCCCAGCCCTCCATCCCAGCCCTCCATCCCAGCCCTCCATCCCAGCCCTCCATCCA	^380 v800 GCAGCGCCTC GCAGCGCCTC	^390 v810 cATCC cATCC
v820 v830 v840 v850 v860 v870 v880 v80 TCAACCTCTGCCTGCCTGCGCTGCGCTGCGCATGACGCCCTG TCAACCTCTGCCTCATCAGCTGCTCATCCTCTCGCCGCTGCGCTTGCGCGCTGCGCATGACGCCCTG TCAACCTCTGCCTCATCAGCCTGGACCGCTACCTGCTCCTCTCGCCCTGCGCCTTGCCCCTG TCAACCTCTGCCTCATCAGCCTGGACCGCTACCTGCTCCTCTCGCCCTGCCCTGCCCTGCCCCTGCCCCTGCCCCTGCCCTCCT	v830 CATCAGCCTGGA CATCAGCCTGGA	v840 ACCGCTACCTG ACCGCTACCTG ACCGCTACCTG	v850 scrcarcerci scrcarcerci scrcarcerci	v860 rgccgcrgcc rgccgcrgcc rcsccgcrgcc	v870 cracaagcre cracaagcre cracaagcre	v880 cccarcaccc cccarcaccc cccarcaccc	v890 cccre cccre
v900 v910 v920 v930 v940 v950 v960 cgrecccraecccraecccraecccraecccraecccraecccraecccraecccraecccaecaecaecccraeccccraeccccraeccccraeccccraeccccraecccccraeccccccaecccccccc	v910 IAGTCCTGGGCG IAGTCCTGGGCG	v920 scredadect credadect scredadect	v930 CGCCGCTCTC CGCCGCTCTC CGCCGCTCTC	v940 GCCTCCTTCC GCCTCCTTCC	v950 TGCCCCTGCT TGCCCCTGCT	v960 GCTGGGCTGG GCTGGGCTGG	v970 CACGA CACGA CACGA
versige version versio	v990 GGCCACCGTC GGCCACCGTC	v1000 CCTGGCCAGI CCTGGCCAGI	v1010 GCCGCCTGCT GCCGCCTGCT	v1020 GGCCAGCCTG GGCCAGCCTG	v1000 v1010 v1020 v1030 v1040 v CCCTGGCCAGTGCCTGCTTTTTGTCCTTGTGGCGTCGGGCC CCCTGGCCAGTGCCGCCTGCCTTTTTTTTTT	v1040 TTGTGGCGTC TTGTGGCGTC	v1050 GGGCC GGGCC GGGCC
v1060 v1020 v1080 v1090 v1100 v1110 v1120 v TCACCTTCTTCCTGCCCCCATATGCTTCACCTACTGCAGGATCCTGCTAGCTGCCCGCAAGCAGGCCGTGCAG TCACCTTCTTCCTGCCCTCGGGTGCCATATGCTTCACCTACTGCAGGATCCTGCTAGCTGCCCGCAAGCAGGCCGTGCAG TCACCTTCTTCCTGCCCTCGGGTGCCATATGCTTCACCTACTGCAGGATCCTGCTGCTGCCCGCAAGCAGGCCGTGCAG	o v1070 sccrceegrec sccrceegrec sccrceegrec	v1080 CCATATGCTTC CCATATGCTTC	v1090 XACCTACTGCA XACCTACTGCA	v1100 AGGATCCTGCT AGGATCCTGCT	v1080 v1090 v1100 v1110 v1120 v CCATATGCTTCACCTGCAGGATCCTGCTAGCTGCCCGCAAGCAGGCCGTGCAG CCATATGCTTCACCTACTGCAGGATCCTGCTAGCTGCCCGCAAGCAGGCCGTGCAG CCATATGCTTCACCTACTGCAGGATCCTGCTAGCTGCCCGCAAGCAGGCCGTGCAG	v1120 AAGCAGGCCGAGCCGAAGCAGGCCG	v1130 TGCAG TGCAG TGCAG
ordescondents vilso vilso vilso significations of the condeced contractions of the con) · v1150 ccaccescarse ccaccescarse	v1160 sccagrcagge sccagrcagge	v1170 ccrcegagace ccrcegagace	v1180 screcagerec screcager c	v1160 v1200 GCCAGTCAGGCCTCGGAGACGCTGCAGGTGCCCAGGGACCCCACGCC-CAGGGGTGG GCCAGTCAGGCCTCGGAGACGCTGCAGGT CCCAGGA CCCA GC CAGGGGTGG GCCAGTCAGGCCTCGGAGACGCTGCAGGTACCCAGGAGCCCCA-GCGGCAGGGGTGG	v1200 ACGCC-CAGG A GC CAGG	200 CAGGGGTGG CAGGGGTGG

~870	v1280 scarcerger scarcerger carcerger
098~	v1230 v1240 v1250 v1260 v1270 v1280 IAGCCACGAAGCA-CAGCAGGAAGGCCCTGAAGGCCAGCCTGACGCTGGGCATCCTGCT IAGC ACGAAG A CAGCAGGAAGG CCTGAAGGCCAGC TGACGCTGGGCATCCTGCT IAGCAACGAAG A CAGCAGGAAGG CCTGAAGGCCAGC TGACGCTGGGCATCCTGCT v900 v910 v920 v920 v930 v940 v95
^850	v1260 saaggccagcci saaggccagc i
^840	v1250 GGAAGGCCCTG GGAAGG CCTG
~830	v1240 AGCA-CAGCAGAGAGAGAGAGAGAGAGAGAGAGAGAGAGA
^820	v IAGCCACGAA IAGC ACGAA IAGCAACGAA
^810	v NCAGCAGGCGTC NCAGCAGGCGTC NCAGCAGGCGTC
008	v1210 v1220 v1230 v1240 v1250 v1260 v1260 v1270 v1280 AGTCTGCTGACGCAGCCTCTAGCCACGAAGCA-CAGCAGGAAGGCCCTGAAGGCCTGACGCTGGGCATCCTGCT AGTCTGCTGACAGCAGGCGTCTAGC ACGAAG A CAGCAGGAAGG CCTGAAGGCCCAGC TGACGCTGGGCATCCTGCT AGTCTGCTGACAGCAGGCGTCTAGCAACGAAG-AGCAGGAAGGGCCTGAAGGCCAGCATGACGCTGGGCATCCTGCT AGTCTGCTGACAGCAGCAGCAACGAAG-AGCAGGAAGGGCCTGAAGGCCAGCATGACGCTGGGCATCCTGCT

GGGCATGTTCTTTGTGACCTGGTTGCCCTTCTTTGTGGCCAACATAGTCCAGGCCGTGTGCGACTGCATCTCCCCAGGCC GGGCATGTTCTTTGTGACCTGGTTGCCCTTCTTTGTGGCCAACATAGTCCAGGCCGTGTGCGACTGCATCTCCCCAGGCC GGGCATGTTCTTTGTGACCTGGTTGCCCTTCTTTGTGGCCAACATAGTCCAGGCCGTGTGCGACTGCATCTCCCCAGGCC v1350 ^1010 v1340 ^1000 v1330 v1320 **086** v1310 v1300

TCTTCGATGTCCTCACATGGCTGGGTTACTGTAACAGCACCATGAACCCCCATCATCTACCCACTCTTCATGCGGGACTTC TCTTCGATGTCCTCACATGGCTGGGTTACTGTAACAGCACCATGAACCCCCATCATCTACCCACTCTTCATGC GGACTTC TCTTCGATGTCCTCACATGGCTGGGTTACTGTAACAGCACCATGAACCCCCATCATCTACCCACTCTTCATGCTGGACTTC v1440 v1430 ^1090 v1420 ^1080 v1410 ^1070 v1400 ^1060 v1390 ^1050 v1380 ^1040

^1190 <u> AAGCGGCGCGCTGGGCAGGTTCCTGCCATGTCGACGCTGTCCCCGGGAGCGCCAGGCCAGGCCTGGCCTCGCCATCACTGCG</u> AAGCGGCGCTGGGCAGGTTCCTGCCATGTCCACGCTGTCCCCGGGAGC CCAGGCCAGCCTGGCCTCGCCATCACTGCG AAGCGGCGCTGGGCAGGTTCCTGCCATGTCCACGCTGTCCCCGGGAGC-CCAGGCCAGCCTGGCCTCGCCATCACTGCG v1510v1500 ^1160 v1490 ^1150 v1480 ^1140 v1470 ^1130 v1460

CACCTCTCACAGCGGCCCCCGGCCCTTAGCCTACAGCAGGTGCTGCCGCTGCCCCTGCCGCCGGACTCAGATTCGG CACCTCTCACAGCGCCCCCGGCCCTTAGCCTACAGCAGGTGCTGCCGCTGCCCCTGCCGGCGGGGACTCAGATTCGG ^1260 v1590^1250 v1580 ^1240 v1570 v1560v1550 v1540

ACTCAGACGCAGGCTCAGGCGGCTCCTCGGGCCTGCGGCTCACGGCCCAGCTGCTGCTTCCTGGCGAGGCCACCAGGAC ACTCAGACGCAGGCTCAGGCGGCTCCTCGGGC TGCGGCTCACGGCCCAGCTGCTGCTTCCTGGCGAGGCCAGGAC **ACTCAGACGCAGGCTCAGGCGCCTCCTCGGGCGTGCGGCTCACGGCCCAGCTGCTTCCTGGCGAGGCCACCAGGAC** v1670 v1660 v1650v1640 v1630 v1620 v1610

^1430 ^1350 CCCCCGCTGCCCACCAGGGCCGCTGCCGCCGTCAATTTCTACATCG-ACCCCGCGGAGCCCGAGCTGCGGCGGCATC CCCCCGCTGCCCACCAGGGCCGCTGCCGCCGTCAATTTCTTCAACATCG ACCCCGCGGAGCCCGAGCTGCGGCCGCATC CCCCCGCTGCCCACCAGGGCCGCTGCCGCCGTCAATTTCTTCAACATCGSACCCCGCGGAGCCCGAGCTGCGGCCGCATC v1760 ^1340 v1750 ^1410 ^1330 v1740 ^1400 ^1320 v1730 ^1390 ^1310 v1720 ^1380 ^1300 V1710 ^1290 v1700 v1690

^1510 CACTTGGCATCCCCACGAACTGACCCGGGCTTGGGGCTGGCCAATGGGGAGCTGGATTGAGCAGAACCCAGACCCTGAGT CACTTGGCATCCCCACGAACTGACCC GGCTTGGGGCTGGCCAATGGGGAGCTGGATTGAGCAGAACCCAGACCCTGAGT CACTTGGCATCCCCACGAACTGACCC-GGCTTGGGGCTGGCCAATGGGGAGCTGGATTGAGCAGAACCCAGACCCTGAGT v1840 v1830 v1820 ^1480 v1810 ^1470 v1800 ^1460 v1790 ^1450 v1780

^1590 CCTTGGGCCAGCTCTTGGCTAAGACCAGGAGGCTGCAAGTCTCCTAGAAGCCCTTGAGAGCTCCAGAGGGGTGCG-CAGAG CCTTGGGCCAGCTCTTGGCTAAGACCAGGAGGCTGCAAGTCTCCTAGAAGCCCTCTGAGAGCTCCAGAGGGGTGCG CAGAG CCTTGGGCCCAGCTCTTGGCTAAGACCAGGAGGCTGCAAGTCTCCTAGAAGCCCTCTGAGCTCCAGAGGGGTGCGGCAGAG v1920 V1910 ^1570 v1900 v1890 ^1550 v1880 ^1540 v1870 v1860

v1980 CTGACCCCCTGCTGCCATCTCCAGGCCCCTTACCTGCAGGGATCATAGCTGACTCAGA CIGACCCCCTGCTGCCATCTCCAGGCCCCTTACCTGCAGGGATCATAGCTGACT AGA CTGACCCCCTGCTGCCATCTCCAGGCCCCTTACCTGCAGGGATCATAGCTGACT-AGA v1970 v1960 v1950 v1940 v1930

Exhibit 2 il Lipman-Pearson Protein Alignment Exhibit 2

	v90 v110 v120 NALYGRWVLARGLCLLWTAFDVMCCSASILNLCLI 	70 v180 v190 v200 v210 v220 v230 v240 ARPPVPGQCRLLASLPFVLVASGLTFFLPSGAICFTYCRILLAARKQAVQVASLTTGMASQASETLQVP	30 v300 v320 v340 v350 v360 AVCDCISPGLFDVLTWLGYCNSTMNPIIYPLFMRDFKRALGRFLPCPRCPRERQASLASPSLRTSHSGP 111111111111111111111111111111111111	
Consensus Length 442	v70 v80 FTSDLMVGLVVMPPAMI FTSDLMVGLVVMPPAMI	v190 VLVASGLTFFLPSGAIC 	v310 v320 SYCNSTMNPIIYPLFMR XCNSTMNPIIYPLFML	v430 v440 PELRPHPLGIPTN PELRPHPLGIPTN ^430
Gap Gap Number Length 5 5	v60 2PALRNTSNFFLVSL 2PALRNTSNFFLVSL ^60	v180 PPVPGQCRLLASLPF PVVPGQCRLLASLPF	v300 :DCISPGLFDVLTWL(:DCISPGLFDVLTWLG	410 v420 v430 v PTRAAAAVNFFNIDPAEPELRPHPLGIPTN ::::!
(1>440) (1>439) Similarity Index 79.6	v50 NSLLIALICT NSLLIALICT	v170 GWHELGHARP:	v290 FVANIVQAVC FVANIVQAVC	O V410 EATQDPPLPTIN PRTPRCP-PGPI
Seq2(1>439) Seq ID 13 - h 5-HT6 from application	V20 v20 v20 v30 v30 v30 v40 v40 v40 v40 v40 v40 v40 v40 v40 v4	v130 v140 v150 v150 v160 v170 v180 v190 v200 v210 v220 v230 v230 v200 v210 v220 v230 v230 v230 v220 v230 v230 v23	v250 v260 v280 v290 v300 v310 v320 v330 v350 v350 v350 v350 v350 v350 v35	v370 v380 v400 v410 v420 v430 v430 v430 v420 v430 v420 v430 v430 v420 v430 v430 v420 v430 v430 v430 v430 v430 v430 v430 v43